Editor's note

In 1980, BEA, in cooperation with the Council of Economic Advisers, the Office of Management and Budget, and several other Federal agencies, prepared new estimates for 1955–80 of the high-employment budget for the Federal Government. These estimates, along with an analysis of the results and a description of the improved methodology, were published in the November 1980 SURVEY OF CURRENT BUSINESS. With that publication, BEA assumed responsibility for the maintenance and improvement of the current and historical high-employment budget estimates. Subsequently, an article in the April 1982 issue of the SURVEY presented revised estimates. The revisions were primarily due to the most recent comprehensive revision of the national income and product accounts, but also incorporated statistical updating and some small improvements in methodology. In addition, the April article introduced estimates of changes in the high-employment budget due to the automatic response of Federal receipts and expenditures to inflation. The inability to separate the inflation-induced changes in the high-employment budget from other changes had been a major limitation of the previously published estimates as a measure of discretionary fiscal policy.

In what follows, William Fellner, of the American Enterprise Institute, presents a critique of the high-employment budget and of potential output—an integral part of the methodology of the high-employment budget—that takes off from the two SURVEY articles. Frank de Leeuw and Thomas M. Holloway, of BEA, respond.

The High-Employment Budget and Potential Output

A Critique

By WILLIAM FELLNER

I. Introduction and Summary

THIS note is motivated in part by dissent from basic premises underlying many writings on the high-employment budget, including Frank de Leeuw and Thomas M. Holloway's article in the April 1982 issue of the SURVEY OF CURRENT BUSINESS. The de Leeuw-Holloway article is a sequel to that published in the November 1980 issue and written by the same authors and by Darwin G. Johnson, David S. McClain, and Charles A. Waite. Some of the reasons for my dissent from the approach used by these authors as well as by earlier contributors were explained in the 1978 volume of the American Enterprise Institute's *Contemporary Economic Problems* series, and the present note develops that critique further.[1]

However, the motivations of this note are not entirely critical. There exists an area of overlap between the approach with the premises of which I disagree and approaches that have been gaining ground over the past years and that will, I hope, continue to gain ground. The existence of this overlap needs to be stressed all the more because the recent contributions of the authors named above have advanced their approach in such a way that various improvements they have made will prove valuable to researchers regardless of their macroeconomic orientation. I will, therefore, first comment on what I regard as the merits of their contributions.

Given the effective tax rates on the incomes of various types and sizes accruing in a country, and given the fiscal commitment of its government, fiscal receipts and expenditures—hence deficits or surpluses—are significantly influenced by the level of economic activity. It is clearly useful to try to obtain good estimates of this effect. Such information is indeed needed, if for no other reason, because it is impossible to estimate the consequences of discretionary changes in tax or expenditure provisions without forming an opinion of how budgetary outcomes were influenced in the past and may be influenced in the future by changes in the activity level.

In their contribution of April 1982, de Leeuw and Holloway have rightly stressed that the determinants of the budgetary outcome *other than the level of economic activity*—hence the determinants of the budgetary outcome at any *given* level of activity—include not only the legal-institutional provisions on which the tax intake and the expenditures depend at any given price level, but also the rates of price change. Quite aside from changes in relative income shares usually brought about by inflation, the inflationary bracket creep and underdepreciation—which, for good reason, have received much attention recently—tend to raise fiscal revenues

1. See in that volume my "Structural Problems Behind Our Measured Unemployment Rates," particularly the section on "The Conventional Concept of Potential Output and the Problem of Rigidities," pp. 84–95.

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in relation to expenditures. It is a merit of the de Leeuw-Holloway contribution that it suggests a method for quantifying the effect of inflation on the budget deficits and surpluses of successive periods. The de Leeuw-Hollway method makes it possible to divide changes in the fiscal receipts and expenditures of successive quarters into two components for levels of output described as "high-employment levels" or "potential levels." These two components are (a) the change that is brought about by changes in effective tax rates and/or in fiscal commitments at an unchanging inflation rate, given the assumed high-employment (potential) level of output, and (b) the change that is brought about by the observed changes in the inflation rate.

An admitted imperfection of the de Leeuw-Holloway method is that the inflation effect on the budget is estimated using the observed inflation rate, and this rate is not the same as the one that would develop at other activity levels, such as the level that the authors assume to be the level of potential output. But this imperfection I consider inevitable, as apparently do the authors, because there exists no reasonably sound method for estimating the inflation rate corresponding to alternative levels of economic activity.

In the foregoing paragraphs I placed the emphasis on what I regard as a common ground. I will now turn to two points of disagreement with the usual presentations, including that of de Leeuw and Holloway.

The first point relates to the significance attributed to the potential output, in terms of which the high-employment budget is defined. This is the output of which it is assumed that it would have become the actual output if the demand for goods and services had been kept sufficiently high, but not so high as to generate inflationary instability.

I will argue that the concept of an output path so described is unhelpful and is apt to become a source of confusion. In the real world, the size of an economy's output potential depends on a large number of variables, including supply-side variables, which are not specified in the models used to obtain the output path for which the high-employment budget is defined. Behavior on the supply side is strongly influenced by the demand-policy posture, and hence it is not a given to those in charge of these policies. Researchers employing the concept of a potential output to be brought about by demand policies can merely give the superficial appearance of deriving that concept from the characteristics of the real world. It is impossible to get around this difficulty by directing attention mostly to period-to-period changes in the high-employment budget, rather than to its level in any one period, because the potential levels of output, and hence the levels of the high-employment budget, are not well-defined magnitudes for any period. Thus, the same arbitrariness that attaches to levels also attaches to changes.

As I see it, providing useful quantitative information to policymakers about budgetary outcomes requires, in addition to estimates of the actual outcome, estimates of how, given all statutory measures and the institutional setting in general, the budgetary outcomes vary within ranges of activity levels and of inflation rates considered to be of interest. The subjective judgment of the expert would then be limited to deciding the width of the range in which the users of the estimates are apt to be interested; even in this decision he would receive some guidance from political decisionmakers and others using the estimates. Within such a reasonably defined range, it would presumably be necessary to select discrete levels of activity and of inflation, although the possibility exists that relations would be found that indicate how the budgetary outcome changes when a move is made from one level to another within the range.

The view I am expressing is consistent with the conviction that orienting demand policies directly to specific "real" results—such as a politically acceptable high-employment path or real GNP—is not a useful policy objective. Under a demand policy known to set itself such "real" objectives, it becomes necessary to accommodate inflationary cost-setting practices developing from the expectation that the authorities will not abandon their "real" objectives even if the price level should rise. Thus, the cost trend will soon start steepening, but the accommodation of this steepening must occasionally be interrupted in order to prevent its getting out of hand at an early stage, and the environment so created is one of significant uncertainty and of low efficiency. Over any reasonable time horizon, a much better output performance is apt to develop under a policy that conditions price expectations, and thus wage and other cost trends, to a consistent average rate of nominal demand creation over cycles as a whole and that thus achieves a reasonable degree of general price stability. Even such a policy is based on the belief that, *once market expectations have become geared to a given rate of nominal demand creation over the cycle*, there will correspond to that path of nominal GNP a path of real GNP that leaves room merely for a price trend that can reasonably be regarded as practically noninflationary. This belief implies that even policymakers oriented to nominal demand expect the trend in real output to fall in a range of moderate width. Yet there exists an essential difference between a policy so described and one based on the assumption that the characteristics of a specified potential output path are known and that it is possible to estimate the demand that will call that path into being.

A policy oriented to nominal demand creation over the cycle as a whole can serve notice to the market participants that the size of the real output for the marketing of which demand will be made available depends on the cost trends and that, hence, the marketable output depends on the behavior of the market participants. Conveyance of this message is an essential property of such a policy. In contrast, while a policy oriented to a real output objective such as potential output is assumed to be compatible with the avoidance of inflationary instability, the assumed compatibility rests on guesswork that is apt to prove wrong once market participants have figured out that the decisionmakers are guided by those objectives. This statement assumes a political environment in which wage and price controls are recognized to be inefficient means of reconciling policy objectives.

The second point of disagreement concerns the reasons why budgetary

outcomes are significant. I will suggest that any statement about these reasons—particularly why deficits and surpluses at alternative activity levels deserve attention—would have to be based on analysis of greater complexity than that implied in most of the recent presentations. These presentations, including de Leeuw and Holloway's, overemphasize macroeconomic expansionary or restraining effects as reasons why deficits and surpluses matter, and the analysis then loses sight of the effect on the consumption-investment mix.

II. Failure of the Potential Path To Represent a "Normalized" Version of Reality

ALL estimates of the path of potential output—the path for which the high-employment budget is defined—must be based on personal judgment of a distinctly subjective kind, and the judgment is no less subjective if reached by the reconciliation of the views of cooperating researchers or decisionmakers. Usually two types of such judgment are made in tracing the path of the potential output, which, it is claimed, would be the actual path if the final demand for goods and services were continuously held at the level inducing a movement along that path.

One of these judgments relates to the period (quarter or year) in which conditions are such that the researcher is led to set potential output equal to actual output. The other relates to the rate of increase of potential output over a span beginning or ending with a period of the assumed equality. The rate of increase of potential output is conceived of as determined by the growth of the quantity of inputs and of their productivity in circumstances in which the inputs and their productivity grow at *their* potential rate.[2] Given that the path of potential output is assumed to be the actual path if demand is kept growing at the appropriate rate, the potential increase in the quantity and the productivity of the inputs are also regarded as those that would materialize if demand were kept as high as possible without destabilizing the economy through price pressures. But the difficulty is that this is an exceedingly hazy conception, one behind which there are vague implications rather than elements of a consistent analytical system.

The potential paths—those of inputs, productivity, and output—that are consistent with the foregoing description depend on a substantial number of determinants of supply behavior in input markets and in markets for final goods and services. These determinants include (1) the preference functions of individuals on the supply side of the markets, (2) the tax structure, (3) the system of transfer payments, (4) the network of regulations, (5) the degree and types of competition in all markets, and, equally important, (6) the public's perception of the basic posture of the authorities in matters of demand-policy. No one in our profession claims to have a reasonably dependable quantitative estimate of the significance of each of these determinants, and these may not even make up a complete list. Yet estimates of potential output are used by the official agencies of the United States and other Western countries as well as by the staffs of important international organizations, and these estimates tacitly imply the effect on supply behavior of the determinants I have listed.

The last of these determinants, market participants' perception of the authorities' demand-policy posture, is important because the question whether a demand policy succeeds in avoiding inflationary instability, which along the path of the potential output *is* supposed to be avoided, depends significantly on the interpretation placed by the markets on the authorities' demand-policy posture. A high-employment path, initially assumed to avoid inflationary instability, will usually turn out to result in such instability once the authorities are known to be committed to promoting that path.

As a result of the difficulties I stressed, the researcher employing the concept of potential output and its budgetary corollary is driven to rely on makeshifts. Given the available information on trends in the various demographic classes, he seeks to "correct" the observed output for the distorting effect of "abnormalities" caused by insufficiencies and excesses of demand. Because of the inevitable vagueness of the judgments involved in this procedure, the resulting "potential" threatens to become a pure figment of the imagination, and hence attempts are made to link the path of potential output, at least in some respects, to objectively ascertainable properties of reality. This need for a link typically expresses itself in the suggestion that the path of potential output is a cycle-neutral path, that is, a path capable of being constructed by removing the cyclical disturbances from the actual path.[3] But this, too, is a much less well-defined concept than the words would suggest. The data listed in table 1 can hardly be said to suggest any convincing link between the de Leeuw-Holloway series of potential output and a cycle-neutral or "normalized" version of reality.

For the entire period covered by the table—a period including four business cycles—the growth of the potential GNP does indeed equal that of the actual GNP.[4] But this is the only respect in which the potential path is anchored successfully to a conception of "normalized" reality—and this is not very much. Even for the period as a whole, the average unemployment rate along the potential path was 1 percentage point lower than the actual rate. Moreover, for three of the four business cycles in the table, there are substantial differences not only between the unemployment rate along the potential path and the actual unemployment rate, but also between the growth rates of potential real GNP and of actual real GNP.

2. Researchers frequently focus on increases in labor hours and in output per labor hour, on specific assumptions concerning other inputs and concerning technological progress.

3. "Cycle neutrality" is explicitly claimed for the concept of the "potential" in the analysis developed by the International Monetary Fund. See the reference in footnote 12. De Leeuw and Holloway call the potential GNP "the trend level of output from which cyclical deviations are measured in calculating the high-employment budget."

4. Rounded to the first decimal, both growth rates are 7.7 percent. For the entire period covered by de Leeuw and Holloway (1955-81), the two rates also round to the same number (7.3 percent).

Table 1.—Measures of the Actual and the Potential Path, 1957–79

(Percent)

Business cycle [1]	Annual compound rates of increase [2]				Average unemployment rate [3]	
	Current dollars		1972 dollars			
	Actual GNP	Potential GNP	Actual GNP	Potential GNP	Along potential path	Actual
	(1)	(2)	(3)	(4)	(5)	(6)
1957–60	4.4	5.3	2.6	3.4	4.8	5.6
1960–69	6.9	6.2	4.3	3.6	4.3	[4]4.9
1969–73	8.5	8.5	3.8	3.8	4.8	5.0
1973–79	10.0	10.5	2.8	3.3	5.1	6.7
1957–79	7.7	7.7	3.5	3.6	4.5	5.5

1. Years shown are years of cyclical peak.
2. Rates of increase are from each year of cyclical peak to next.
3. Last year of each cycle is excluded from average to avoid double counting of peak years.
4. Includes 4 years, 1966–1969, during which the actual unemployment rate fell short of the unemployment rate along the potential path. During these 4 years actual GNP exceeded potential GNP, as it did also in 1965 and 1973.

NOTE.—The de Leeuw-Holloway series cover 1955–81. During these years actual GNP is assumed to equal potential GNP in the second quarter of 1956 and in the fourth quarter of 1969. (The first of these quarters falls outside the span covered by this table because it covers only year-of-peak to year-of-peak periods.) The actual unemployment rate is assumed to equal the unemployment rate along the potential path in the year 1956. (As it turned out, the actual rate was equal to the rate along the potential path also in the first quarter of 1956, the first quarter of 1957, and the second quarter of 1973.)

Thus, in no usual sense of the term is it convincing to speak of the "cycle neutrality" of the potential GNP. The construction of the potential series, and hence of the corresponding high-employment budget, involves a substantial degree of arbitrariness.

It is possible to go even a step further in this criticism by pointing out that, if by common-sense criteria the concept of the potential touches on characteristics of the real world in some respects, then it is very unlikely to do so in many others. These inconsistencies occur because the concept of potential lacks an analytical structure that would anchor it to the real world in a systematic fashion. To illustrate: By criteria that are largely intuitive but reasonably convincing, it does "make sense" to assume, as de Leeuw and Holloway do, that in the second quarter of 1956 the real GNP was at its potential level (see note to table 1). Yet it makes very little sense to say that in 1973–79, a significantly inflationary period, the path of potential real GNP was rising at an annual rate of 3.3 percent while that of actual real GNP was rising at a rate of 2.8 percent, or that in the same period the potential path would have been associated with a 5.1-percent average unemployment rate in contrast to an actual rate of 6.7 percent. At the end of that period, in the cyclical peak year 1979, the potential output is said to have been 1.4 percent higher than the actual output, and the corresponding unemployment rate is said to have been 0.7 percentage point lower than the actual rate, although from 1978 to 1979 the GNP deflator rose 8.5 percent and the Consumer Price Index no less than 11.3 percent. It is very difficult to relate to reality a "potential" that exhibits this behavior, or even to attach any essential meaning whatever to such a "potential."

III. Survival of a Concept Despite Its Deficiencies

THERE are several signs of awareness of these difficulties—perhaps even of the legitimacy of the objections I am expressing—on the part of experts estimating and employing the concept of potential output and of the high-employment budget.

De Leeuw and Holloway call the reader's attention to the fact that "there is a wide range of plausible estimates of the potential GNP." They illustrate this very convincingly by providing specific figures in the text (not in their tables) for what the potential output and high-employment budget would have been if for 1975–81 they had assumed that the unemployment rate associated with the potential output was 6.0 percent instead of the 5.1 percent underlying their series. The reader learns that the difference would have been large.

Similarly noteworthy are the discussions of ambiguities contained in the Council of Economic Advisers' explanations of various revisions of the estimated path of potential GNP. The latest revision accompanied by a somewhat detailed discussion of the reasons for it appeared in the January 1979 Report of the Council (pp. 72–76), and it is impossible to go through that discussion without becoming conscious of the amount of personal judgment involved in the procedure by which the revised figures were obtained.

The question arises why, in spite of these acknowledged difficulties and in spite of frequent ex post facto revisions of official estimates of the potential output, that concept and its budgetary and other corollaries have so far survived. I think the answer is that all these concepts fit in rather well with a particular view of macroeconomics my dissent from which was expressed on earlier occasions and was repeated in the introductory section of the present paper. This was for some time the dominant view—a view that had become frozen into the orthodoxy of several decades; I think this view is about to lose its dominance, although it is still held by many economists.

As I have argued, the concept of the potential output and its corollaries fit into a macroeconomic view that takes for granted a supply-side trend compatible with reasonable price stability, although such stability is exceedingly unlikely to develop under a policy focused on the achievement of a specified high-employment output path. I consider it fortunate that there is much more appreciation of this criticism than there was a few years ago, and also more understand-

ing of the undesirability of wage and price controls as a means of circumventing the basic difficulty. Yet for the time being these issues remain hotly debated, and scrapping the apparatus employed on one side of the debate—i.e., the apparatus of potential output and its corollaries—would not meet (or not *yet* meet?) with general approval among economists.

IV. The Expansionary and Contractionary Effects and the Effect on the Consumption-Investment Mix

IN addition to being critical of the concept of potential output and of the high-employment budget, I want to express the conviction that, aside from a few exceptions, the usual presentation of these concepts directs attention far too exclusively to expansionary and contractionary effects as the relevant criteria for appraising the significance of deficits and surpluses. I shall suggest at the end of this note that several decades ago the originators of the high-employment budget concept seem to have had different criteria.

The opening statement of the de Leeuw-Holloway article reads: "The high-employment budget provides a summary measure of the effects of a Federal fiscal program on aggregate demand. It is a better measure for this purpose than the actual budget because it excludes the changes in receipts and expenditures that are automatic responses to fluctuations in economic activity." The suggestion here clearly is that, on implied "other things equal" assumptions, to which I will return, a move to a *high-employment deficit* or toward a higher such deficit tends to raise aggregate demand in an economy conceived of as initially placed on the path of the potential output, while a move toward a *high-employment surplus* or toward a higher such surplus, tends to have the contrary effect, and that the emphasis belongs on these consequences of the high-employment budget.

On the same implied "other things equal" assumptions, an *actual* deficit, such as develops even in the event of a balanced high-employment budget when output falls short of the potential, also has a demand-raising effect; and an *actual* surplus, such as develops even in the event of a high-employment balance when output exceeds the potential, also has a demand-moderating effect. But these built-in (automatic) stabilizing effects of the difference between the actual and the high-employment budget merely reflect existing deviations from the potential output level.

This overemphasis on expansionary and contractionary budgetary effects detracts attention from the restrictive nature of the implied "other things equal" assumption, and it detracts attention also from the effect of deficits on the consumption-investment mix.

The "other things equal" assumption implied in the analysis placing all the emphasis on expansionary and contractionary budgetary effects relates to monetary policy. The assumption involves regarding the money supply as *given*, because in normal circumstances expansionary or contractionary effects of deficits or surpluses can be offset by reduced or stepped-up money creation. The circumstances in which this is not the case are those of the Keynesian "liquidity trap" (*absolute* liquidity preference).[5] These circumstances may arise in some phases of depressions, but they command little interest in the analysis of typical relations in a present-day economy.

Moreover, even on the implied assumption of a given money supply, the demand-raising (or reducing) effects of budgetary deficits (or surpluses), on which the usual presentations place all the emphasis, can result only from reduced (or increased) money holdings per unit of expenditure, that is, from increased (or reduced) velocity. Thus, focusing on the demand-raising (or reducing) effects of the budget involves concentrating on what in terms of the equation of exchange are money-velocity effects. Such effects are likely to develop from deficit-financed government expenditures to the extent that the public regards the government securities by which deficits are financed as money substitutes, that is, as assets for which money is obtainable promptly at very little cost when needed. But there is reason to be critical of a procedure that stresses these velocity effects assuming that they are *not* offset by adjustments of money creation, and that does not even mention the strong presumption that, given the level of activity, deficits reduce and surpluses increase private investment. In the United States, although not in all Western countries, private investment includes practically all investment of enterprises.

The proposition that deficits are financed by saving that would otherwise be available for financing private investment, and the analogous proposition for surpluses, are subject to qualifications that should not be overlooked; I will briefly consider them in the next section. But the burden of proof remains on those who might attribute decisive importance to these qualifications and therefore might suggest disregarding the effect of deficits and surpluses on the consumption-investment mix. This effect has been receiving increasing attention, and I think rightly so.

To simplify the analysis of budgetary effects on the consumption-investment mix, it is advisable to assume that the overall macroeconomic expansionary or contractionary effects of the budget are offset by monetary policy. By thus setting a given level of aggregate output, it is possible to avoid dealing with two problems at the same time and to concentrate on the consumption-investment mix at that output level. The proposition that, for a given output level, deficits reduce private investment in relation to consumption (and surpluses increase investment) has strong foundations in general observations and common-sense reasoning.

The proposition rests on the view that members of the public consider themselves savers to the extent that they refrain from consumption in order to buy government securities. Hence, to the extent that they behave in this way, the public is "saving" in a form that takes the place of forms

5. These are circumstances in which the demand for money is infinitely elastic to interest rates, and all increases (or decreases) in the money supply result merely in increased (or decreased) money holdings per unit of expenditure rather than in increased (or decreased) expenditures.

that would make the saving available to private investors. Indeed, it may be asserted firmly that the public does put part of its conventionally defined saving—that is, income after taxes minus consumption—into government securities.[6] Qualifications of the conclusion that deficits diminish the saving available for private investment imply, therefore, that if the saving as conventionally defined is partly used up for financing deficits, then the public will save more than it would otherwise save in order to achieve the objectives for which it is saving.

V. Qualifications of the Investment-Reducing Effect of Deficits

IF the qualifications to be considered in this section were completely disregarded, government deficits would have to be viewed as displacing private investment by the full amount of the deficits. However, it would be wrong to disregard these qualifications, the more relevant of which emphasize the fact that the purchase of the government securities representing the deficit may occur jointly with a downward revaluation of components of the purchaser's net worth in terms of goods and services (his "real" net worth). This downward revaluation may, in turn, induce the buyers of government securities to save more in the conventional sense (current income minus consumption) to make up for the loss.[7] If there is more saving, there is an offset to the investment-reducing effect of deficits.

To be specific, one reason given by some economists for qualifying the proposition concerning the saving-absorbing (investment-reducing) effect of deficits is that deficits increase the future flow of tax liabilities, and that, therefore, a public fully aware of this should not regard government securities as sources of a future flow of benefits. Hence, a well-informed public should not, on balance, interpret its acquisitions of government securities as true saving in the sense relevant to its behavior, that is, as relevant to the objectives it is pursuing by its saving decisions. This is essentially David Ricardo's "equivalence theorem" as formulated, for example, in chapter XVII of his *Principles*. According to this theorem, the appropriate insights on the part of the public would prevent the emergence of a difference between the effects of tax-financed and deficit-financed public expenditures: In the event of deficit-financing, the present value of the future flow of the resulting tax liabilities merely takes the place of what the present tax liabilities would be in the event of tax-financing.[8] But Ricardo, who called attention very clearly to the logical foundations of this theorem, did not believe that the public really behaved in this fashion. He believed—rightly, I think—that given the public's actual behavior, deficits do channel saving away from investment.

As I see it, the "equivalence theorem" disregards at least two aspects of the problem of deficit-financing. One of these is that the future flow of tax liabilities, which the theorem stresses, will become largely a burden of future generations, and, in the appraisal of the present savers, the interests of those generations are not truly equivalent to their own. The other is that, within limits, the servicing of the public debt can be undertaken by issuing additional government securities, rather than by taxation. The point here is that, if in a growing economy the servicing of the public debt by issuing additional government securities does not exceed specifiable limits, interest on the debt will not show a rising trend in relation to income, and a sustainable path may develop. So much for the equivalence theorem and its limitations.

The proposition concerning the investment-reducing effects of deficits has recently been said to be subject to limitations for a different reason. Although unrelated to the equivalence theorem, and suggesting a less sweeping qualification, this argument also builds on the assumption that a public placing part of its conventionally defined saving in government securities does not regard the entire amount so "saved" as saving in the sense relevant to its own behavior. Assume that in an inflationary era the public is promised and receives, say, 15 percent interest on government securities purchased out of its income. Even if the public considers 10 percentage points of the 15 an inflation premium, in the conventional sense it still will have saved the equivalent of the entire amount of the security purchase. According to this argument, however, the public will behave as if it were a true saver only to the equivalent of 90 percent of the security purchase; the remaining 10 percent is needed to avoid a loss in real terms. Consequently, while the conventional definition of saving—income after taxes minus consumption—includes in the public's saving the entire nominal value of these securities, the public will be found to save more in the conventional sense than it would have if there had not been a 10-percent inflation premium. In the sense of the conventional saving concept, the public will save the 10 percent in question *additionally*. Hence, to the extent of the inflation premium included in the nominal interest on government securities,

6. To be precise, in addition to consumption, the interest paid by consumers to business and transfer payments to foreigners are also to be deducted from income after taxes to arrive at personal saving. Moreover, if one wished to include corporate saving, one would have to add to personal saving the difference between corporate profits after taxes (with the inventory valuation and capital consumption adjustments) and dividend payments. I will explain in this footnote why, for the present specific purpose, it is preferable not to add corporate saving defined in this way to personal saving.

The reason is that much of the discussion in the next section will be concerned with qualifications of the proposition that deficits fully divert saving from private investment, and an analysis of this problem needs to focus on the difference between saving in the conventional sense and changes in net worth, including "real" revaluations. A discussion of the effect of revaluations on saving in the conventional sense calls for valuing and revaluing corporate assets on the basis of the judgment of stockholders, rather than by reference to any of the valuation methods that are implied in the corporate saving concept. This conclusion speaks for interpreting changes in net worth as resulting from personal saving plus asset revaluations, including stock-market revaluations.

7. See footnote 6 for the conventional definition of saving.

8. Even if the public had the insights here assumed, this theorem would not imply that private investment, which in the United States includes almost all investment of enterprises, suffers no reduction. Tax-financed government expenditures, unless they are of specific types that are complementary with private investment, also reduce private investment to some extent. This is because they reduce disposable income at any given level of GNP, and this normally reduces not only consumption, but to some extent also the saving of the public. But this is, of course, a far cry from suppression of investment by the full amount of tax-financed government expenditures.

the deficit will, according to this argument, not cut into the saving available.

However, as Phillip Cagan has stressed, this qualifying argument should at any rate draw a distinction between allowances for anticipated inflation rates expressing themselves in the nominal interest rates and unexpected losses in the real value of assets suffered by security holders subsequently.[9] It is convincing to suggest that income recipients firmly expecting to suffer a loss on the real value of a security that they are acquiring will compensate for this by saving more from the outset in the conventional sense of the term, in order to achieve their true saving objective. Yet, even if they do behave in this fashion when they expect the loss, they are very likely to give themselves quite a bit of time for gradually (and perhaps only partially) making up by additional saving any *unexpected* real loss of which they may become aware at some subsequent stage in the later course of events.

We have now considered the two analytically significant qualifications to which the proposition concerning the investment-reducing effect of deficits is subject. A third qualification often referred to is sufficiently different from the two qualifications just discussed to justify, in the present context, its relegation to a footnote.[10]

As to the first of the analytically significant qualifications of the investment-reducing effect, I gave reasons for believing that Ricardo's judgment was sound when he suggested that, in the mind of the public, the acquisition of new government securities does not typically become associated with the need to deduct from the private wealth the discounted value of an additional flow of future tax liabilities. And as to the other qualification—the qualification based on the assumption that saving in the conventional sense will rise if inflation reduces the real value of the government securities that finance the deficit—this does not suggest that, on balance, deficits do *not* cut into the saving available for private investment; it merely suggests that the *extent* to which deficits cut into such saving is reduced by the public's awareness of a loss in the real value of government securities due to inflation. Furthermore, I agree with Cagan that the magnitude of any such effect depends on how much of the inflationary decline in real value is expected, that is, has become incorporated in the nominal rates of interest.

The real problem so posed is part of the more general problem of the effect of the real revaluation of assets—not just of government debt—on saving as conventionally defined. Most economists would rightly be reluctant to base strong assertions about this effect on the quantitative information now available. My own very tentative reading of the data suggests the likelihood that downward real revaluations of assets have exerted a moderate positive effect on saving ratios (and that upward real revaluations have exerted the opposite effect), and this reading would leave a modest amount of room for one of the qualifications of the investment-reducing effect of deficits. But any suggestion about the size of the revaluation effects on saving ratios must indeed be described as tentative. These suggestions must remain tentative even in cases in which the real revaluations do not simply reflect changes in the real rate of interest, that is, in cases in which downward revaluations do clearly express a loss and upward revaluations a gain to the saver owning the assets. Even in these cases, serious difficulties stand in the way of quantitative appraisals of the effects of the revaluations on saving behavior partly because, in the long run, cumulative real revaluations of all household assets jointly considered are small—and are probably also expected to remain small—as compared with cumulative incomes and partly because there is a very large discrepancy between the saving ratios derived from the national income and product accounts and those derived from the flows of funds. This discrepancy is disturbing because it remains large even after allowance for the differences in the concepts underlying the two series.

It follows that some questions had better be left open at this stage, in part because more help is needed from the statistical agencies. But it also follows from the foregoing analysis that these open questions relate not to whether at given levels of activity deficits divert saving from investment, but merely to the possibility that the extent of this diversion is reduced by the behavior described in the discussion of qualifications. It is safe to conclude that the *main thrust* of a reasonable argument lies in the proposition that deficits divert saving from investment, not in the qualifications that the net-worth effect of an expected flow of future tax payments and the inflationary reduction of real asset values induce an increase in saving. This is the reason why, in addition to being critical of the concept of potential output and of the corresponding concept of the high-employment budget, I do not favor placing almost exclusive emphasis on expansionary and contractionary effects of the budget. Instead, I favor calling attention to the relation of deficits and of surpluses to the saving available for investment. The conceptual and statistical difficulties involved in doing this satisfactorily must not be underrated, but promising new beginnings have been made in this direction in various quarters.[11]

In fact, as concerns the recognition of the bearing that deficits and sur-

9. Phillip Cagan, "The Real Federal Deficit and Financial Markets," *AEI Economist*, November 1981.

10. This qualification expresses itself in the proposition that deficits in any one country need not channel away from investment the saving of the same country, because the interest-raising effect of the deficits may generate a capital inflow from abroad. This is true but is of doubtful significance in the present context. If capital is sufficiently mobile, the absorption of domestic saving by deficits may not greatly reduce the accumulation of physical capital in the domestic economy, but there will be an accumulation of foreign claims against the domestic economy. Secondary advantages may nevertheless develop to the domestic economy from such capital formation even if the resulting capital involves foreign ownership. These secondary advantages to the domestic economy are apt to result from complementarity effects of other inputs (particularly of labor) with capital.

11. See the International Monetary Fund, *World Economic Outlook*, Occasional Paper No. 9 (Washington, D.C.: International Monetary Fund, 1982), pp. 105–07, and tables 55–57. See also the observations in the *Annual Report of the Council of Economic Advisers*, in *Economic Report of the President* (Washington, D.C.: U.S. GPO, 1983), p. 95 ff.

pluses have on the consumption-investment mix at given levels of economic activity, it is less appropriate to speak of new beginnings than of a return to the viewpoint of those who pioneered the concept of the high-employment or "full-employment" budget. In their November 1980 article, de Leeuw et al. rightly assign this pioneering role to the Committee for Economic Development (CED), and they do so by reference to Herbert Stein's account and analysis of the CED's deliberations in the years immediately following World War II.[12] From Stein's analysis, it appears that the CED's view of the problem recognized the possibility of achieving any level of economic activity, including a high-employment or "full-employment" level, with different receipt-expenditure relations, depending on the monetary policy. From the same analysis it also appears that, when proposing emphatically a fiscal policy resulting in a surplus at what it considered a feasible "full-employment" level, the CED was motivated largely by the desire to promote investment.

12. Herbert Stein, *The Fiscal Revolution in America* (Chicago and London: University of Chicago Press, 1969), especially pp. 220 ff.

A Response

By FRANK de LEEUW and THOMAS M. HOLLOWAY

FELLNER'S central points, we believe, are his criticism of using potential GNP as a policy target and his criticism of overemphasizing the shortrun expansionary and contractionary effects of fiscal policy. We agree with much of what Fellner has to say about these central points.

However, we will argue that these points have more to do with how the high-employment budget is used—and, even more, with how potential GNP is used—than with how the high-employment budget is constructed. Furthermore, the uses that Fellner criticizes are much less in evidence today than they were a decade or more ago. One possible implication of his criticisms is that potential GNP should be revised or replaced by an alternative trend. As far as we can see, there are no implications for the rest of the high-employment budget methodology—the gross-up method, the elasticity estimates, the treatment of automatically indexed expenditure programs, and all the other steps that constituted the subject matter of our two articles.[1]

We begin with some observations on the various uses of potential GNP and of the high-employment budget. Next, we comment on Fellner's points about potential GNP. We then comment on his points about the overemphasis on the expansionary-contractionary effects of the Federal budget. Finally, we draw some conclusions about the measurement of the Federal Government impact on the economy.

Uses of potential GNP and of the high-employment budget

Potential GNP has been used in two principal ways: as a target for policy and as a trend from which cyclical movements in GNP are measured. The policy-target use was important in early discussions of the high-employment budget by the Committee for Economic Development (CED) and in *Economic Reports of the President*.[2] The 1962 *Economic Report*, for example, defined potential GNP as the level of real GNP corresponding to a 4-percent unemployment rate, and stated that "an unemployment rate of about 4 percent is a reasonable and prudent full employment target for stabilization policy."[3]

Recent discussions of potential GNP have emphasized its use as a trend rather than as a policy target. The 1978 *Economic Report of the President*, for example, stated that "the use of high-employment GNP as the level of activity underlying this hypothetical budget [i.e., the high-employment budget] is a convenient but arbitrary convention. The purpose is to adjust the budget for cyclical changes in the economy, and this could as well be accomplished using any other trend path of GNP."[4] Denison has defined potential GNP as output corresponding to a 4-percent unemployment rate and certain other conditions, and emphatically stated that "potential output each year would *not* represent a target for demand management policy."[5] Our articles on the high-employment budget also used potential GNP as a trend rather than as a policy target.[6]

Parallel to this shift in the use of potential GNP has been a shift in the

1. The articles did not discuss potential GNP in any detail, noting that the Council of Economic Advisers, rather than BEA, provides the estimates of potential GNP.

2. *Taxes and the Budget: A Program for Prosperity in a Free Economy* (New York: Committee for Economic Development, 1947), pp. 31–32. *Fiscal and Monetary Policies for Steady Economic Growth* (New York: Committee for Economic Development, 1969), pp. 60–61.

3. *Economic Report of the President* (Washington, D.C.: U.S. GPO, 1962), p. 46.

4. *Economic Report of the President* (Washington, D.C.: U.S. GPO, 1978), p. 54.

5. Edward F. Denison, "Changes in the Concept and Measurement of Potential Output in the United States of America," in Joachim Frohn and Rainer Staglin, eds., *Empirische Wirtschaftsforschung: Konzeptionen, Verfahren und Ergebnisse* (Berlin: Duncker & Humblot, 1980), p. 28. Italics are Denison's.

6. Frank de Leeuw, Thomas M. Holloway, Darwin G. Johnson, David S. McClain, and Charles A. Waite, "The High-Employment Budget: New Estimates, 1955–80," SURVEY OF CURRENT BUSINESS 60 (November 1980): 16, 18. Frank de Leeuw and Thomas M. Holloway, "The High-Employment Budget: Revised Estimates and Automatic Inflation Effects," SURVEY 62 (April 1982): 21.

use of the high-employment budget. Early CED discussions emphasized the use of the full-employment budget, as it was then called, in setting targets for fiscal policy. The CED "stabilizing budget policy" called for a small surplus in the full-employment budget.[7] The *Economic Reports of the President* have only occasionally used the high-employment budget in this way. The 1973 *Economic Report* was the last one in which the level of the high-employment budget was used for setting targets; it stated that a balanced high-employment budget "is the best single guide to a budget policy that neither pushes the economy above its desired growth rate nor holds the economy below it."[8]

More recent discussions of the high-employment budget have used it merely as a cyclically adjusted indicator of changes in fiscal policy, without any implication that a given surplus or deficit is too low or too high. The 1974 *Economic Report* stated that, despite serious limitations in the measurement of potential output, "the full-employment surplus calculation based on the traditional concept of the potential GNP that is consistent with 4 percent unemployment is useful in the long run for evaluating changes in fiscal policy."[9] Later *Economic Reports* continued to use the high-employment budget as an indicator of changes in fiscal policy. Our articles also clearly emphasize this use.

Potential GNP

Fellner's central criticism of potential GNP is that its use as a policy target is unwise. Defining potential GNP as "the output of which it is assumed that it would have become the actual output if the demand for goods and services had been kept sufficiently high, but not so high as to generate inflationary instability," he states that it is difficult to measure, and clearly believes that recent estimates have been too high.[10] Even if the estimates of potential GNP are correct, furthermore, Fellner argues that trying to move the economy along the potential GNP path would be inflationary because policymakers would be tempted "to accommodate inflationary cost-setting practices developing from the expectation that the authorities will not abandon their 'real' objectives even if the price level should rise." We agree with Fellner that a policy of closing the gap between actual and potential GNP (as he defines it) through demand management is often hazardous—a position that an increasing number of economists have come to take in the last few years.

However, we do not feel that much follows from all this for the measurement of the high-employment budget. If potential GNP and the high-employment budget are used merely as indicators—as has been the case in recent years—then we see no harm in the present method of measurement, even when potential GNP exceeds the path of GNP consistent with no inflationary instability. As long as no inferences are drawn about the desirable level of the high-employment surplus or deficit, the high-employment budget remains a useful indicator.

The only implication of Fellner's criticism for measurement of the high-employment budget, as far as we can see, is that when the high-employment budget is used merely as an indicator of fiscal policy, then there is no special argument for basing it on potential GNP rather than on some other measure of trend. Recognizing that potential GNP is difficult to define and measure, our initial article compared the high-employment budget based on potential GNP with an alternative cyclically adjusted budget based on a 5-year moving average of GNP (and a 5-year moving average of the unemployment rate).[11] Apart from selecting a trend, the method of constructing a cyclically adjusted budget was exactly the same in the two cases. The article included a chart comparing the two budgets, and noted that quarter-to-quarter movements in the two were similar, but that there were differences over longer spans, such as the degree to which fiscal policy shifted toward a deficit from the 1950's to the 1960's.

Possibly the attractive name "potential GNP," associated with the attractive condition "high employment," might tempt policymakers to pursue unwise policies. We doubt that this temptation is an important factor; if it is, it advances the case for using some other measure of—or at least some other name for—the trend level of GNP.

Expansionary-contractionary effects of fiscal policy

Another central point in Fellner's critique is that discussions of fiscal policy have overemphasized its expansionary-contractionary effects and underemphasized its investment-substitution, or crowding-out, effects. Fellner considers some objections to the proposition that crowding-out is important but decides that these objections have only limited validity. We agree with much of what he has to say as it applies to the long run.

If discussions of fiscal policy have overemphasized expansionary-contractionary effects and underemphasized crowding-out effects, however, the remedy is simple; it is to discuss crowding-out more and/or expansionary-contractionary effects less. Our first article referred briefly to the expansionary-contractionary effects of fiscal policy and not at all to the crowding-out effects. We concede that this emphasis was probably one-sided; but we do not see that anything follows about the gross-up method, the estimation of elasticities, or any of the other technical steps in constructing the high-employment budget.

7. *Taxes and the Budget*, pp. 22-27.
8. *Economic Report of the President* (Washington, D.C.: U.S. GPO, 1973), p. 74.
9. *Economic Report of the President* (Washington, D.C.: U.S. GPO, 1974), p. 79.
10. We note that Fellner's definition of potential GNP is not the usual one. For a review of alternative definitions and a criticism of the one Fellner chooses, see Denison, "Changes in the Concept and Measurement of Potential Output," pp. 21-23.
11. de Leeuw, et al., "High-Employment Budget: New Estimates," pp. 30-31.

Conclusions

Fellner has raised some important issues about certain of the uses of potential GNP and the high-employment budget. We agree with some of his central criticisms of these uses; but we do not feel that these criticisms have important implications for the construction of the high-employment budget. At most, they may strengthen the case for moving away from a potential GNP series to some other method of representing the trend component of GNP.

Any summary indicator of the effects of the Federal Government on the economy has its limitations, and the high-employment budget is no exception. Some of the limitations were discussed in the first of our articles.[12] Other limitations stem from the fact that the high-employment budget is restricted to Federal receipts and expenditures, and does not reflect the impacts of Federal credit programs or of changes in the real value of Federal debt and assets. In spite of these limitations, we think that at present the high-employment budget is a useful tool of analysis for economists of many viewpoints, and not—in Fellner's words—"the apparatus employed on one side of the debate" about economic policies.

12. de Leeuw et. al., "High-Employment Budget: New Estimates," pp. 21–22.